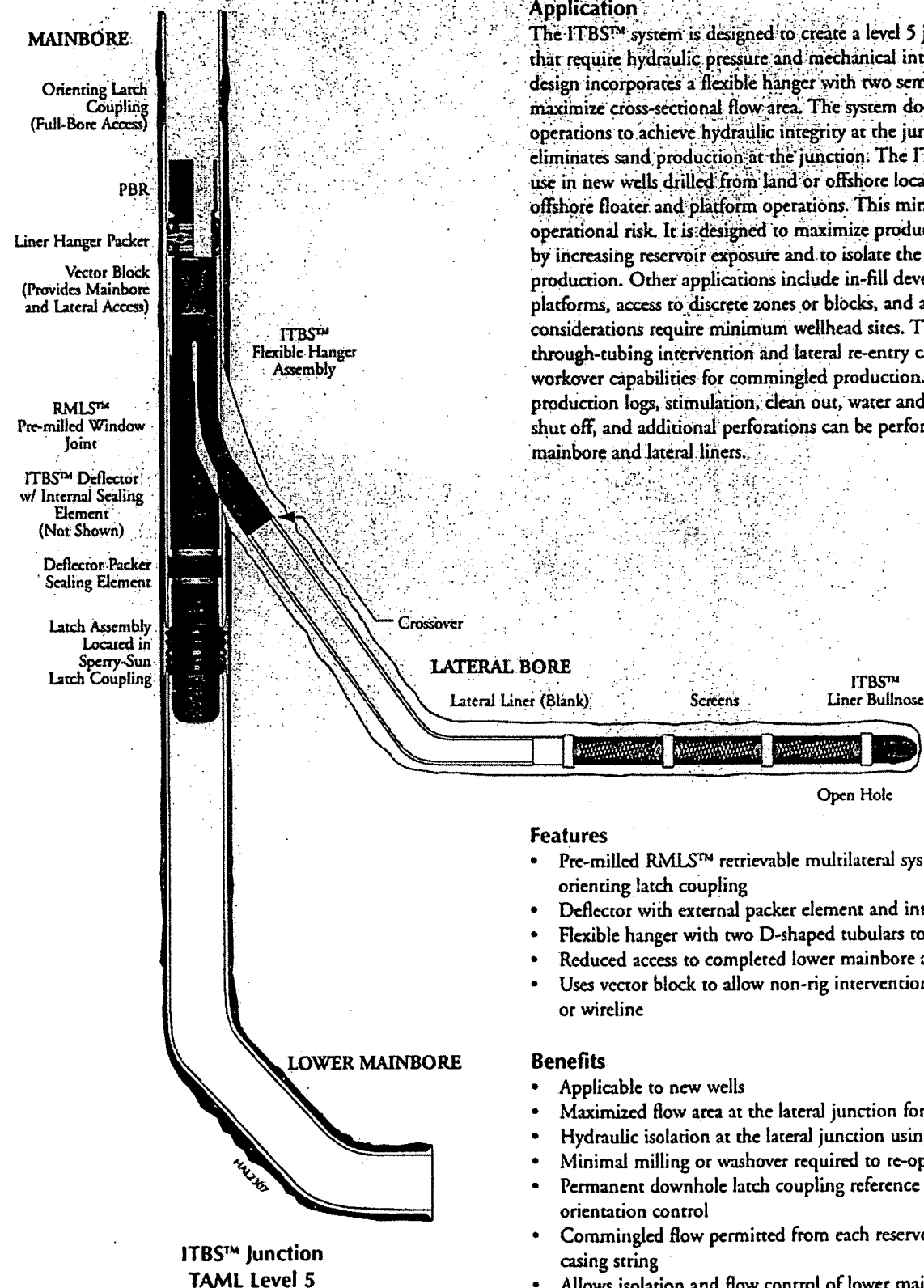


Multilateral Services Profile

ITBS™ Isolated Tie-Back System

LatchMaster™ Pre-milled Window Systems



Application

The ITBS™ system is designed to create a level 5 junction for multilateral wells that require hydraulic pressure and mechanical integrity at the junction. The design incorporates a flexible hanger with two semi-circular sections to maximize cross-sectional flow area. The system does not require cementing operations to achieve hydraulic integrity at the junction. The flexible hanger eliminates sand production at the junction. The ITBS™ system is designed for use in new wells drilled from land or offshore locations. Primary uses are offshore floater and platform operations. This minimal-trip system has a low operational risk. It is designed to maximize production per wellhead location by increasing reservoir exposure and to isolate the junction from sand production. Other applications include in-fill development, slot-constrained platforms, access to discrete zones or blocks, and areas where environmental considerations require minimum wellhead sites. The ITBS™ system offers through-tubing intervention and lateral re-entry capabilities with separate workover capabilities for commingled production. Operations such as production logs, stimulation, clean out, water and gas isolation, water and gas shut off, and additional perforations can be performed on both the lower mainbore and lateral liners.

Features

- Pre-milled RMLS™ retrievable multilateral system window joint with orienting latch coupling
- Deflector with external packer element and internal sealing component
- Flexible hanger with two D-shaped tubulars to maximize flow area
- Reduced access to completed lower mainbore and lateral
- Uses vector block to allow non-rig intervention with coiled tubing or wireline

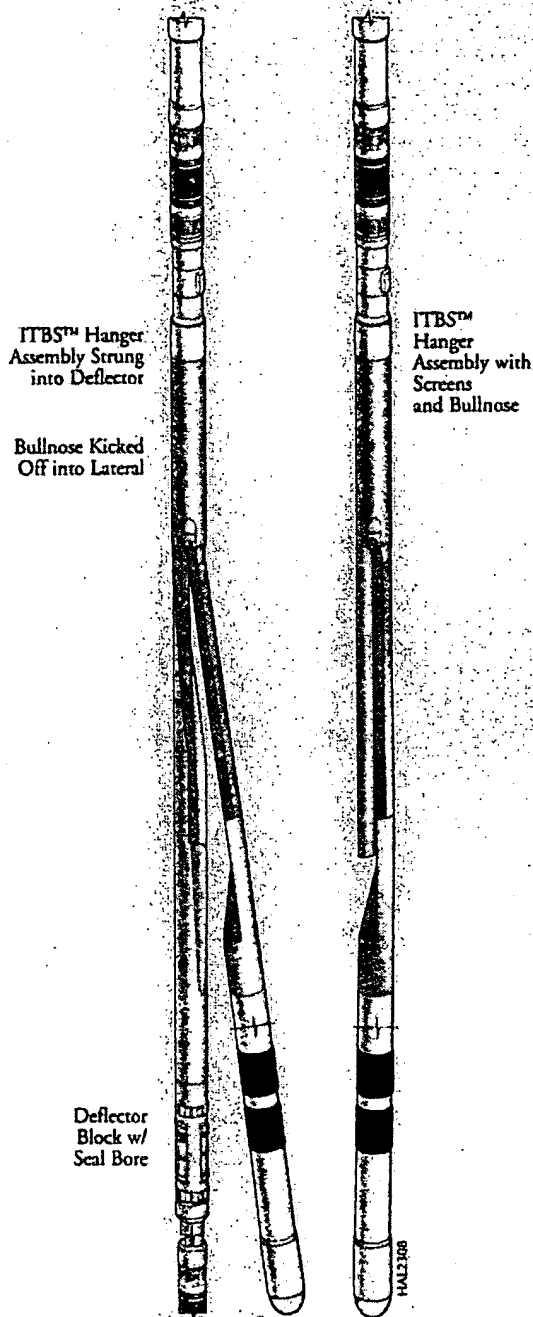
Benefits

- Applicable to new wells
- Maximized flow area at the lateral junction for production optimization
- Hydraulic isolation at the lateral junction using casing
- Minimal milling or washover required to re-open the mainbore
- Permanent downhole latch coupling reference for depth and orientation control
- Commingled flow permitted from each reservoir through the mainbore casing string
- Allows isolation and flow control of lower mainbore and lateral

Multilateral Services *Specifications*

ITBS™ Isolated Tie-Back System

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Typical Installation Sequence

- Drill mainbore and install mainbore casing with RMLS™ window.
- Install drilling whipstock.
- Drill lateral as required.
- Retrieve the drilling whipstock.
- Install the ITBS™ deflector assembly and inflate the packer element.
- Run in lateral liner assembly with orienting bullnose and flexible hanger. Orient the lateral liner assembly and flexible hanger and stroke the flexible hanger to depth, engaging mainbore stinger in the deflector seal bore.
- Set upper liner hanger and inflate liner hanger packer.
- Release running tool and retrieve liner hanger running tool and workstring from wellbore.
- Install completion and flow well.

ITBS™ System Specifications

| TAML Level 5 | | |
|---------------------------|--|---|
| System casing size | 9-5/8 in. 244.5 mm | |
| Casing weight | 43-47 lb/ft | |
| Window type | Pre-milled window with flexible hanger | Pre-milled window with D-shaped flexible hanger |
| Flexible hanger access ID | 8.525 in. x 3.437 in. x 3.375 in. | |
| Lateral hole size | 8-1/2 in. 215.9 mm | |
| Lateral liner size | 5-1/2 in. to 7 in. 139.7 mm to 177.8 mm | |
| Lateral access | 3.437 in. | 3.437 in. with 4-3/4 in. flow area |
| Lower mainbore access | 3.375 in. | 3.375 in. with 4-3/4 in. flow area |
| Burst/collapse rating | 1,500 psi/1,000 psi | |

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DRILLING SERVICES

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